MODEL PAPER PHYSICS CLASS 9

NOTE: Attempt all questions from Section A by filling the corresponding bubble on the MCQs RESPONSE SHEET. it is mandatory to return the attempted MCQs sheet to the Superintendent within given time.

SECTION –A

Time: 20 Minutes **Marks:** 12

1. The number of significant digits in 0.0096800 is

   a. 2

   b. 3

   c. 4

   d. 5

2. Car is moving along the straight road with velocity 10 m/s, after 4s its velocity becomes 30 m/s, the acceleration of car is:

   a. 5 m/s^2

   b. 10 m/s^2

   c. 80 m/s^2

   d. 160 m/s^2

3. The centripetal acceleration of body of mass 1.5 kg moving with velocity 3 m/s in circle of radius 3 m is:

   a. 6 m/s^2

   b. 4 m/s^2

   c. 3 m/s^2

   d. 0.5 m/s^2

4. The unit of coefficient of friction is:

   a. m/s
   b. m/s^2
   c. N-m
   d. Unit less quantity

5. The second condition of Equilibrium is:

   a. $\sum T=0$

   b. $\sum F=0$

   c. $\sum P=0$

   d. $\sum W=0$

6. The angle between rectangular components of force is:

   a. 30^0

   b. 45^0

   c. 60^0

   d. 90^0

7. Which of the following quantity will change when a body moves from sea level to mountain?

   a. Mass

   b. Volume

   c. Weight

   d. Density

8. A boy of mass 45 kg runs up on stairs of height 4m in 5sec, the power in boy ($g=10m/s^2$) is:

   a. 450 watts

   b. 360 watts

   c. 36 watts

   d. 24.5 watts

9. The energy due to motion of body is:

   a. Kinetic energy

   b. Potential energy

   c. Chemical energy

   d. Thermal energy

10. The hydraulic brakes of heavy vehicles operate on:

    a. Archimedes Principle

    b. Pascal's principle

    c. Work energy principle

    d. Principle of moment arm

11. The temperature of human body is 37^{o} C, the same temperature in Fahrenheit will be:

    a. 96.6^{0}F

    b. 97.6^{0} F

    c. 98.6^{0} F

    d. 99.6^{0} F

12. The transfer of heat from the sun to earth is due to:

    a. Radiation

    b. Convection

    c. Conduction

    d. Absorption

SECTION –B

Time: 2 Hours 40 Minutes **Marks:** 32

1. Briefly attempt any Eight of following short questions, each carry 4 marks

i. Describe **Four** crucial roles of Physics in daily life.

ii. Differentiate scalars and vectors with suitable examples.

iii. Define momentum along with its mathematical form and unit. Also write at least **Two** factors on which it depends.

iv. Define friction and write at least **Three** methods to reduce friction.

v. Calculate the mass of earth by using Newton's law of gravitation.

vi. Define heat and temperature. Write at least two differences between heat and temperatures.

vii. Derive K. E= $\frac{1}{2}$ mv^2

viii. Define power along with its mathematical form and unit.

ix. State Pascal 's Law and also write **Three** applications in daily life.

x. Define pressure. Show that liquid pressure P = ρ g h

xi. Define transfer of heat by convection, and give three examples from daily life.

SECTION –C

Marks: 21

NOTE: Attempt any THREE of the following questions, each carry 7 marks

2. i. State Newton's second law of motion. 2+3+2

ii. Prove that time rate of linear momentum is equal to net force acting on body.

iii. The momentum of bullet fired from gun is 0.732 ns and velocity is 62 m/s. Find the mass of bullet.

3. i. Define and explain turning effect of force by relating it to everyday life. 4+3

ii. The force applied to open door is 12 N at 30^0. Find the horizontal and vertical components of force.

4. i. Define work and its units. 4+3

ii. A Girl is pulling trolley school bag by applying a force of 15 N at 45^0 and covers a distance of 100 m. Calculate the work done.

5. i. Describe the thermal expansion of solid. 4+3

ii. Explain why evaporation causes cooling?